IN THE CLAIMS:

Please amend the claims as indicated below.

1. (Currently Amended) A method for use in finding near-neighbors in a set of objects comprising the steps of:

identifying subspace pattern similarities that the objects in the set exhibit in multi-dimensional spaces; and

defining subspace correlations between one of the objects in the set and each of one or more remaining ~~two or more of the~~ objects in the set based on the identified subspace pattern similarities for use in identifying near-neighbor objects.

2. (Original) The method of claim 1, wherein the identifying step further comprises the step of creating a pattern distance index.

3. (Original) The method of claim 1, wherein the multi-dimensional spaces comprise arbitrary spaces.

4. (Original) The method of claim 2, wherein the creating step further comprises the step of determining a subspace dimensionality of one or more patterns in the pattern distance index.

5. (Original) The method of claim 4, wherein the subspace dimensionality is an indicator of a degree of similarity between the objects.

6. (Original) The method of claim 1, wherein data relating to the objects is static.

7. (Original) The method of claim 1, wherein data relating to the objects comprises dynamic data insertions.

8. (Original) The method of claim 1, wherein data relating to the objects comprises gene expression data.

9. (Original) The method of claim 1, wherein data relating to the objects comprises synthetic data.

10. (Original) The method of claim 1, wherein identifying the subspace pattern similarities comprises a comparison of any subset of dimensions in the multi-dimensional spaces.

11. (Original) The method of claim 1, wherein identifying the subspace pattern similarities comprises an ordering of dimensions in the multi-dimensional spaces.

12. (Original) The method of claim 1, wherein each object is represented by a sequence of pairs, each pair indicating a dimension and an object value in that dimension.

13. (Original) The method of claim 12, wherein a first pair in the sequence of pairs comprises a base of comparison for one or more remaining pairs in the sequence of pairs.

14. (Original) The method of claim 12, wherein the sequence of pairs is represented sequentially in a tree structure comprising one or more edges and one or more nodes.

15. (Original) The method of claim 2, wherein creating the pattern distance index comprises use of pattern-distance links.

16. (Original) The method of claim 1, wherein the process is optimized by maintaining a set of embedded ranges.

17. (Original) The method of claim 1, wherein the subspace correlations comprise a distance between two or more of the objects in the set.

18. (Currently Amended) A method of performing a near-neighbor search of one or more query objects against a set of objects comprising the steps of:

creating a pattern distance index to identify subspace pattern similarities that the objects in the set exhibit in multi-dimensional spaces;

defining subspace correlations between one of the objects in the set and each of one or more remaining ~~two or more of the~~ objects in the set based on the identified subspace pattern similarities; and

using the subspace correlations to identify near-neighbor objects among the query objects and the objects in the set.

19. (Currently Amended) An apparatus for use in finding near-neighbors in a set of objects, the apparatus comprising:

a memory; and

at least one processor, coupled to the memory, operative to:

identify subspace pattern similarities that the objects in the set exhibit in multi-dimensional spaces; and

define subspace correlations between one of the objects in the set and each of one or more remaining ~~two or more of the~~ objects in the set based on the identified subspace pattern similarities for use in identifying near-neighbor objects.

20. (Currently Amended) An article of manufacture for finding near-neighbors in a set of objects, comprising a computer readable medium containing one or more computer programs which when executed implement the steps of:

identifying subspace pattern similarities that the objects in the set exhibit in multi-dimensional spaces; and

defining subspace correlations between one of the objects in the set and each of one or more remaining ~~two or more of the~~ objects in the set based on the identified subspace pattern similarities for use in identifying near-neighbor objects.